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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/006,794

12/04/2001

Hitoshi Fukushima

9319S-000311/CPA

1876

27572

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09/01/2005

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EXAMINER

GHYKA, ALEXANDER G

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/006,794	Applicant(s) FUKUSHIMA ET AL.	
	Examiner Alexander G. Ghyka	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 14-16 and 26 is/are rejected.
- 7) ☒ Claim(s) 11-13 and 17-25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

ALEXANDER GHYKA
PRIMARY EXAMINER

Av 2812
Alex Ghyka

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Applicants' RCE of 6/20/2005 has been entered. Claims 1-26 are now under consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2 and 4-5 rejected under 35 U.S.C. 102(e) as being anticipated by Romanack et al (US 6,413,574).

The present Claims generally require a method of fabricating a layer of a substance on a substrate comprising depositing the substance on the substrate using carbon dioxide in a supercritical condition.

Romanack et al discloses deposition systems using carbon dioxide on metal surfaces. See column 3, lines 1-55 and column 5, lines 55-65. Romanack et al disclose the use of alcohols, such as methanol as co-solvents. See column 5, lines 10-17. Therefore Romanack et al anticipate claims 1-2 and 4-5 of the present Claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-10, 14-16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enick et al (US 6,183,815) in view Romanack et al (US 6,413,574).

Enick et al disclose a method and composition for the surface treatment of metals which includes a method of self assembling a mono layer by using fluoroalkanes as claimed in Claim 7, (where "m" and "n" are zero) and compressed carbon dioxide as a solvent. See column 2, lines 15-30, column 2, line 50 to column 3, line 30, and column 3, line 60 to line 67. Moreover, Enick et al disclose the use of propanol as a solvent. See column 6, line 60 to column 7, line 15. Furthermore, Enick discloses the use of metals as required by the present Claims. See column 8, lines 45-52.

Thus, Enick et al is shown to teach all of the features of the claims with the exception of the presence of liquid carbon dioxide in a supercritical condition.

Romanack et al discloses deposition systems using carbon dioxide on metal surfaces. See column 3, lines 1-55. Romanack et al disclose the use of alcohols, such as methanol as co-solvents. See column 5, lines 10-17. Romanack et al further

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discloses that the term liquid carbon dioxide encompasses supercritical carbon dioxide.

See column 5, lines 55-65.

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to use supercritical carbon dioxide as the solvent called for by the Elnick et al reference, as Elnick et al call for liquid carbon dioxide, and as Romanack et al disclose that the term liquid carbon dioxide encompasses supercritical carbon dioxide. The use of a supercritical carbon dioxide would be *prima facie* to one of ordinary skill in the art, as Elnick et al disclose liquid carbon dioxide, and Romanack et al disclose that the term liquid carbon dioxide encompasses supercritical carbon dioxide. The use of supercritical carbon dioxide for its benefit as a solvent is *prima facie* obvious in view of the disclosure of Enick et al and Romanack et al.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Enick et al (US 6,183,815) in view Romanack et al (US 6,413,574), as applied to claims 1-2, 4-10,14-16 and 26 above, and further in view of Hoy et al (US 5,108,799).

Enick et al and Romanack et al are relied upon as discussed above.

However, neither Elnick et al nor Romanack et al disclose a cosolvent in supercritical condition along with supercritical carbon dioxide.

Hoy et al disclose the use of combinations of supercritical solvents, including supercritical carbon dioxide to apply coatings on surfaces. Hoy et al also disclose cosolvents such as methanol, propanol and other alcohols. See Abstract and column 7, lines 1-45.

It would have been obvious for one of ordinary skill in the art to use the co-solvents of Elnick et al and Romanack et al in supercritical condition, for their known benefit in the art in applying coatings on various surfaces. The use of a known co-solvent as disclosed by Elnick et al and Romanack et al, in super critical condition, would be obvious in view of the disclosure of Hoy et al. As both Elnick and Romanack et al suggest the use of supercritical solvent, the use of a supercritical co-solvent would be obvious in light of the teaching of Hoy et al.

Allowable Subject Matter

Claims 11-13 and 17-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The cited prior art does not disclose or suggest the co-solvents as required in the afore mentioned claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Thursday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on (571) 272-1873. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGG

August 28, 2005

ALEXANDER GHYKA
PRIMARY EXAMINER

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